

## [ B R I E F R E P O R T ]

# A Case of Palmoplantar Pustulosis Induced by Certolizumab Pegol

## New Anti-TNF-alpha Demonstrates the Same Class Effect

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### ABSTRACT

The development of *de novo* psoriasis in patients treated with tumor necrosis factor-alpha antagonists is well recognized. The authors hereby report a case of palmoplantar pustular psoriasis in a patient with rheumatoid arthritis treated with etanercept. The condition responded to topical steroids but re-occurred upon treating the patient with certolizumab pegol. This strongly suggests that the development of *de novo* psoriasis is a class effect. (*J Clin Aesthet Dermatol.* 2012;5(8):40–41.)

The authors read with great interest a clinical review by Moustou et al<sup>1</sup> concerning the cutaneous side effects of tumor necrosis factor-alpha (TNF- $\alpha$ ) antagonists. It is clear that etanercept, infliximab, and adalimumab have proven safe and efficacious for the treatment of rheumatoid arthritis (RA), Crohn's disease (except etanercept), ankylosing spondylitis, and psoriatic arthritis. However, there is a well-documented association with the development of psoriasis in a small percentage of patients treated with these agents. A recent prospective study by Harrison et al<sup>2</sup> identified 25 cases of RA patients treated with anti-TNF- $\alpha$  agents who developed psoriasis. All three agents appear to be able to induce the undesirable effect. Wollina et al<sup>3</sup> reviewed 120 cases from the literature and reported six new cases. They identified the most common presentation as psoriasis vulgaris, followed by palmoplantar pustular psoriasis and guttate psoriasis.

The authors recently encountered a 78-year-old man with a long-standing history of RA who was treated with methotrexate and etanercept (25mg twice weekly). After 10 weeks on this regimen, he developed fevers and malaise along with a small cluster of pustules on his palms. Laboratory workup did not reveal any infectious etiology. At the time, he was diagnosed with palmar-pustular psoriasis, with etanercept suspected as the triggering

factor. After withdrawal of etanercept, he improved with topical steroids. Subsequently, he was seen by his rheumatologist and was started on certolizumab pegol. He received two subcutaneous injections (400mg dose) every two weeks for a total of six weeks. Again, he presented with rapid-onset pustular lesions on his palms, but this presentation was more severe than the first, as he also developed large confluent pustules on the hands (Figure 1) and scattered pustules involving the anterior chest and posterior scalp. Biopsy was consistent with palmoplantar psoriasis. Certolizumab pegol was discontinued, and the patient again improved with high-potency topical steroids.

Certolizumab pegol was initially approved for the treatment of Crohn's disease and more recently for moderate-to-severe RA. It is the first and only pegylated TNF- $\alpha$  antagonist for the treatment of RA, and it has demonstrated meaningful and durable clinical response with an acceptable safety profile.<sup>4</sup> Of note, these trials report some adverse events, but the development of psoriasis or psoriasiform eruptions has never been documented in the literature. As concluded by Moustou et al,<sup>1</sup> psoriasis and psoriasiform eruptions are "strongly associated" with the use of TNF- $\alpha$  antagonists. This report again supports the notion that these eruptions are indeed related to a class effect of these drugs. It appears that re-

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**Figure 1.** Pustular lesions involving palmar surface of the hands.

challenge, even with a different TNF- $\alpha$  antagonist, elicits a more rapid onset and more severe presentation of disease. It is thought that these patients may actually develop a paradoxical increase in TNF- $\alpha$  level. Although the mechanism is unclear, the pathogenesis appears to involve disruption of the cytokine milieu with unopposed interferon- $\alpha$  production by plasmacytoid dendritic cells in genetically predisposed individuals.<sup>5</sup> It is important to mention that although some reports have demonstrated recurrence of lesions with reinstitution of the same TNF- $\alpha$  antagonist (a positive challenge test) or a different agent,<sup>6</sup>

in a recent review by Collamer and Battafarano,<sup>5</sup> 66 percent of patients were able to continue TNF<sup>+</sup> antagonist therapy with psoriasis treatments.

It is important for clinicians to be aware of this possible drug effect, especially when considering risks and benefits of therapies.

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